



Fig. 1.

NL1:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC 60
 CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA 120
 ACCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG 180
 M A D T I F G S G N D Q 12
 TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC 240
 W V C P N D R Q L A L R A K L Q T / G W S 32
 GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGCGGAGGTG 300
 V H T Y Q T E K Q R R K Q H L S P A E V 52
 GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAGCAGAGA 360
 E A I L Q V I Q R A E R L D V L E Q Q R 72
 ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG 420
 I G R L V E R L E T M R R N V M G N G L 92
 TCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTCTGTC 480
 S Q C L L C G E V L G F L G S S S V F C 112
 AAAGACTGCAGGAAGGTCTGGAAGAGGTGCGGGGCTGGTCTACAAAGGGCTCCCCAAG 540
 K D C R K V W K R S G A W F Y K G L P K 132
 TATATCTTGCCCCCTGAAGACCCCTGGCCGAGCTGATGAGCCCCAGTTCGACCTTGCCCC 600
 Y I L P L K T P G R A D E P Q F R P W P 152
 ACGGAACCGGCAGAGCGAGAGCCCAGAAGCTCTGAGACCAGCCGCATCTACACGTGGGCC 660
 T E P A E R E P R S S E T S R I Y T W A 172
 CGAGGAAGAGTGGTTTCCAGTGACAGTGACAGTGACTCGGATCTTAGCTCCTCCAGCCTA 720
 R G R V V S S D S D S D S D L S S S S L 192
 GAGGACAGACTCCCATCCACTGGGGTCAGGGACCGGAAAGGCGACAAACCCTGGAAGGAG 780
 E D R L P S T G V R D R K G D K P W K E 212
 TCAGGTGGCAGCGTGGAGGCCCCAGGATGGGGTTCACCCAACCCGCGGGCCACCTCTTT 840
 S G G S V E A P R M G F T Q P A G H L F 232

GGGTTGCAGAGCAGCCTGGCCAGTGGTGAGACGGGCACAGGCTCTGCTGACCCGCCAGGG 900
 G L Q S S L A S G E T G T G S A D P P G 252
 GGAGGGACAGGCTCTGCTGACCCGCCAGGGGGACCCCGCCCGGGCTGACCCGAAGGGCC 960
 G G T G S A D P P G G P R P G L T R R A 272
 CCGGTAAAGACACACCTGGACGAGCCCCGCTGCTGACGCAGCTCCAGCAGGCCCTCC 1020
 P V K D T P G R A P A A D A A P A G P S 292
 AGCTGCCTGGGCTGAGGTGTCTGGTGCCTGGAACAGACTTCCCTGTGGAGGATTCTGCC 1080
 S C L G * 296
 AGACCCTGCCCCGGCTCCTCCCTGACCGGTCTTGTGCCCTCACCAGACACCCTGTTGGCC 1140
 ATGACTCAACAAACAGTGTGGGAGCCGTCTGCCTCCCCAGCTCAGTGCCTTTCTGCAC 1200
 CCCTTCTCTCCTGGGGAGCTGTCTGCATCCGCCACCCCTCCAACCACTGCCCTCAGCC 1260
 CCGACCTTATTTATTACCCTCCCTCCACACCCCCAATCTACCTGGTGATGATTTTAAG 1320
 TTGCGCGTGTCTTGGGTTGGGCTGGGGGGTTTCCACATGCAGTGTGAGAGGGCCGCC 1380
 CCGTGGGGCTATCTCCGTTGCTATATTAATGGCAAGACTAAATGAAACCTAGGGCACGGC 1440
 CTCCGAAGCTGCGTGTGGCCCTTAGAGGTGAGCATCAGAGCCAGAGCAGTGAGGGGGAG 1500
 ACTCACCCACCCTCTCCCTCTCCCTTCAGCTCTGGGAGGCAGGCGCAGTGCCCCCTCCC 1560
 ATGGGCTGGCCCAGGACCGCGGGTGAAACCTGGGTCTGTTTAGTTCTTTGGTTTTGTGTA 1620
 TGTTTGTGTTTTTTGACACAGTCTCGCTTTGTTGCCAGGCTGGGGTGAGTGGCACGA 1680
 TCGCGGCTCACTGCAACCTCCACCTCCCGGGCTCAAGCGATTCTCTCACCTCAGCCTCCT 1740
 GAGTAGGTGGGATTACAGATGCCCCCACCACACCAGTTAATTTTGTATTTTAGAAG 1800
 AGATGGGGTTTCTCCATGTTGGCCAGGCTGGTCTTGAACCTCCTGGTCTCAAGTGATCCGC 1860
 CCGCCTCGGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCACCGCACCCAATCCTATT 1920
 AGGTTTCTTTGAATCCCCCTCATGGCCTGCCTGGTTTTTGTCTAGCCTGTCTTCAGCTGA 1980
 GGAGCTGGGAAGCTCTGGTGGATGCTATGAACTCACTTGCTGAAGAGCAGCGTTCAGGTG 2040
 CATCCCCAGCCAGGGCACGTGGCTCCCTCAGCCATGAATTCACCTTCTCTTCAGGAGGTTT 2100
 GGCTTGGCATGAAAATACTTCATTAGAGTATGGGCAAATGCTTCTGGAAAACCCCTCCC 2160
 TGAAGAGAGAGAACGTGTGTGTGTGTGTGCGTGATCACACCCCTCCCATCCTTCCTGCCTC 2220
 CTGCCCCAAACCCCGGGTCTGGGTCTGGAAGGGCCTTCTCTCAAGCTGGGAGCTCCT 2280
 GGGCCCCCACCATTCACTTTTGTCTTGCTGCTGGCAAACAGTAAAGAACTCACTTTC 2340
 CCTGTGGCACGTTATGCTTCAGAATTAAACAATGAAGATTAAAA 2385

Fig. 2

CL1:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCGACAACGGTGGTGGGAGGGAGAGCGGC	60
CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA	120
ACCCCGAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGQAATGATCAG	180
M A D T I F G S G N D Q	12
TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC	240
W V C P N D R Q L A L R A K L Q T G W S	32
GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCGGAGGTG	300
V H T Y Q T E K Q R R K Q H L S P A E V	52
GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAGCAGAGA	360
E A I L Q V I Q R A E R L D V L E Q Q R	72
ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG	420
I G R L V E R L E T M R R N V M G N G L	92
TCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTCTGC	480
S Q C L L C G E V L G F L G S S S V F C	112
AAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGCCAGAAG	540
K D C R K K V C T K C G I E A S P G Q K	132
CGGCCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGGTGCGGG	600
R P L W L C K I C S E Q R E V W K R S G	152
GCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCTGAAGACCCCTGGCCGAGCT	660
A W F Y K G L P K Y I L P L K T P G R A	172
GATGACCCCCACTTCCGACCTTTGCCACGGAACCGGCAGAGCGAGAGCCCAGAAGCTCT	720
D D P H F R P L P T E P A E R E P R S S	192
GAGACCAGCCGCATCTACACGTGGGCCCCGAGGAAGAGTGGTTTCCAGTGACAGTGACAGT	780
E T S R I Y T W A R G R V V S S D S D S	212
GACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTCAGGGAC	840
D S D L S S S S L E D R L P S T G V R D	232

CGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGGATGGGG 900
R K G D K P W K E S G G S V E A P R M G 252
TTCACCCAACCCGCGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGTGAGACG 960
F T Q P A G H L F G L Q S S L A S G E T 272
GGCACAGGCTCTGCTGACCCGCCAGGGGGAGGGACAGGCTCTGCTGACCCGCCAGGGGGA 1020
G T G S A D P P G G G T G S A D P P G G 292
CCCCGCCCCGGGCTGACCCGAAGGGCCCCGGTAAAAGACACACCTGGACGAGCCCCCGCT 1080
P R P G L T R R A P V K D T P G R A P A 312
GCTGACGCAGCTCCAGCAGGCCCTCCAGCTGCCTGGGCTGAGGTGTCTGGTGCCTGGAA 1140
A D A A P A G P S S C L G * 325
CAGACTTCCCTGTGGAGGATTCTCTGCCAGACCTGCCCCGCTCCTCCCTGACCGGTCCTT 1200
GTGCCCTCACCAGACACCCTGTGGCCATGACTCAACAAACCAGTGTGGGAGCCGTCTG 1260
CCTCCCCAGCTCAGTGCCTTTCTGCACCCCTTCTCTCCTGGGGAGCTGTCTGCATCCGCC 1320
ACCCCCCTCAACCACTGCCCTCAGCCCCCGACCTTATTTATTACCCTCCCCTCCCACACC 1380
CCCAATCTACCTGGTGATGATTTTAAAGTTTGCGCGTGTCTTGGGTTGGGCTGGGGGGTTT 1440
CCCACATGCAGTGTGAGAGGGGCCGCCCGGTGGGGCTATCTCCGTTGCTATATTAATGGC 1500
AAGACTAAATGAAACCTAGGGCACGGCCTCCGAAGCTGCGTGTGGCCCCCTTAGAGGTGAG 1560
CATCAGAGCCAGAGCAGTGAGGGGGAGACTCACCCACCTCTCCCTCTCCCTTCAGCTCT 1620
GGGAGGCAGGCGCAGTGCCCCCTCCCATGGGCTGGCCCAGGACCGCGGGTGAAACCTGG 1680
GTCTGTTTAGTTTCTTTGGTTTTTGTATGTTTGTTTGTTTTTGACACAGTCTCGCTTTGT 1740
TGCCCAGGCTGGGGTGCACTGGCACGATCGCGGCTCACTGCAACCTCCACCTCCCGGGCT 1800
CAAGCGATTCTCTCACCTCAGCCTCCTGAGTAGGTGGGATTACAGATGCCCGCCACCACA 1860
CCCAGTTAATTTTTGTATTTTGAAGAGATGGGGTTTCTCCATGTTGGCCAGGCTGGTC 1920
TTGAACTCCTGGTCTCAAGTGATCCGCCCCGCTCGGCCTCCCAAAGTGCTGGGATTACAG 1980

GTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCTGCCTGG 2040
TTTTTGCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTATGAACT 2100
CACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCCTCAGCC 2160
ATGAATTCACCTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTAGAGTATG 2220
GGCAAATGCTTCTGGAAAACCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTGTGTCGGTG 2280
ATCACACCCTCCCATCCTTCCCTGCCTCCTGCCCCAAACCCGGGTTCCTGGGTCTGGAAG 2340
GGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTTGTCTTGCTGC 2400
TGGCAAACAGTAAAGAACTCACTTTCCTGTGGCACGTTATGCTTCAGAATTAAACAA 2460
TGAAGATTAAAA 2472

TGAACTCAGTTCGCTGAAGAGCAGCGTTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCC	2220
TCAGCCATGAATTCACCTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTTCAG	2280
AGTATGGGCAAATGCTTCTGGAAAACCCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTG	2340
TCGGTGATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCCGGGTTCCTGGGTC	2400
TGGAAGGGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCACCATTCACTTTTGTCTCT	2460
TGCTGCTGGCAAACAGTAAAGAAACTCACTTTCCTGTGGCACGTTATGCTTCAGAATTA	2520
AAACAATGAAGATTAAAA	2538

Fig. 4

CL3:

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GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC      60
CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA    120
ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG      180

      M A D T I F G S G N D Q      12

TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCTGCAGACGGGCTGGTCC      240
      W V C P N D R Q L A L R A K L Q T G W S      32
GTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGCGGAGGTG      300
      V H T Y Q T E K Q R R K Q H L S P A E V      52
GAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCTTGAGCAGCAGAGA      360
      E A I L Q V I Q R A E R L D V L E Q Q R      72

ATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAACGGCCTG      420
      I G R L V E R L E T M R R N V M G N G L      92
TCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTGTCTGC      480
      S Q C L L C G E V L G F L G S S S V F C      112
AAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGCCAGAAG      540
      K D C R K K V C T K C G I E A S P G Q K      132
CGGCCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGGTGCGGG      600
      R P L W L C K I C S E Q R E V W K R S G      152
GCCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCTGAAGACCCCTGGCCGAGCT      660
      A W F Y K G L P K Y I L P L K T P G R A      172
GATGACCCCCACTTCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCAGAGCTCT      720
      D D P H F R P L P T E P A E R E P R S S      192
GAGACCAGCCGATCTACACGTGGGCCCCGAGGAAGAGTCGTAGGAAGAAAGTGCTGATCC      780
      E T S R I Y T W A R G R V V G R K C *      210

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TTGAACTCCTGGTCTCAAGTGATCCGCCCCCTCGGCCTCCCAAAGTGCTGGGATTACAG 2100
 GTGTGAGCCACCGCACCCAATCCTATTAGGTTTCTTTGAATCCCCTCATGGCCTGCCTGG 2160
 TTTTGTCTCAGCCTGTCTTCAGCTTGAGGAGCTGGGAAGCTCTGGTGGATGCTATGAACT 2220
 CACTTGCTGAAGAGCAGCGTTCAGGTGCATCCCCAGCCAGGGCACGTGGCTCCCTCAGCC 2280
 ATGAATTCACCTTCTCTTCAGGAGGTTTGGCTTGGCATGAAAATACTTCATTCAGAGTATG 2340
 GGCAAATGCTTCTGGAAAACCCTTCCCTGAAGAGAGAGAACGTGTGTGTGTGTGTCGGTG 2400
 ATCACACCCTCCCATCCTTCCTGCCTCCTGCCCCAAACCCGGGTTCCTGGGTCTGGAAG 2460
 GGCCTTCTCTCCAAGCTGGGAGCTCCTGGGCCCCCACCATTCACTTTTGTCTTGCTGC 2520
 TGGCAAACAGTAAAGAAACTCACTTTCCTGTGGCACGTTATGCTTCAGAATTAACAACAA 2580
 TGAAGATTAAAA 2592

Fig. 5

CL4:

GGCTCCTCATCTGGAACACCTCGGGTCACCCCCGACAACGGTGGTGGGAGGGAGAGCGGC	60
CTCCTCCTCCCTGGTGGGGCCTGTCTGGGTGAAGCCCCTCTGTTCCCGAGGATCGTCCCA	120
ACCCCCAGCCGGGTGCTCCGAGCCATGGCCGACACCATCTTCGGCAGCGGGAATGATCAG	180
TGGGTTTGCCCCAATGACCGGCAGCTTGCCCTTCGAGCCAAGCACTGACTGCACAGCAGT	240
GAACAGGACCAACACAGTCCCTGGTCTTAAAGCACAGGTGGGCAGAGGCTGCAGACGGGC	300
TGGTCCGTGCACACCTACCAGACGGAGAAGCAGAGGAGGAAGCAGCACCTCAGCCCGGCG	360
GAGGTGGAGGCCATCCTGCAGGTCATCCAGAGGGCAGAGCGGCTCGACGTCCTGGAGCAG	420
CAGAGAATCGGGCGGCTGGTGGAGCGGCTGGAGACCATGAGGCGGAATGTGATGGGGAAC	480
M R R N V M G N	8
GGCCTGTCCCAGTGTCTGCTCTGCGGGGAGGTGCTGGGCTTCCTGGGCAGCTCGTCGGTG	540
G L S Q C L L C G E V L G F L G S S S V	28
TTCTGCAAAGACTGCAGGAAGAAAGTCTGCACCAAATGTGGGATCGAGGCCTCCCCTGGC	600
F C K D C R K K V C T K C G I E A S P G	48
CAGAAGCGGCCCCTGTGGCTGTGTAAGATCTGCAGTGAGCAAAGAGAGGTCTGGAAGAGG	660
Q K R P L W L C K I C S E Q R E V W K R	68
TCGGGGGCTGGTTCTACAAAGGGCTCCCCAAGTATATCTTGCCCTGAAGACCCCTGGC	720
S G A W F Y K G L P K Y I L P L K T P G	88
CGAGCTGATGACCCCCACTTCCGACCTTTGCCCACGGAACCGGCAGAGCGAGAGCCCAGA	780
R A D D P H F R P L P T E P A E R E P R	108
AGCTCTGAGACCAGCCGCATCTACACGTGGGCCCCGAGGAAGAGTCGTAGGAAGAAAGTGC	840
S S E T S R I Y T W A R G R V V G R K C	128
TGATCCACGCTGCAGCCTGGATGAGTCCTTGAAAACACCATGCGAAGTGGAAGAAGCCGG	900
AGACGAAAGGCCGCGTGTGTGTGATCTCATCTATATGAGCAGTGGTTTCCAGTGACAGT	960
GACAGTGACTCGGATCTTAGCTCCTCCAGCCTAGAGGACAGACTCCCATCCACTGGGGTC	1020
AGGGACCGGAAAGGCGACAAACCCTGGAAGGAGTCAGGTGGCAGCGTGGAGGCCCCCAGG	1080
ATGGGGTTACCCCAACCGCGGGGCCACCTCTTTGGGTTGCAGAGCAGCCTGGCCAGTGGT	1140

Fig. 6

1	15 16	30 31	45 46	60 61	75 76	90
1 NOC2	-----	-----	-----	-----	-----	0
2 NL1	GGCTCCTCATCTGGA	ACACCTCGGGTCACC	CCCGACACGGTGGT	GGGAGGGAGAGCGGC	CTCCTCCTCCCTGGT	GGGGCCTGTCTGGGT 90
3 LC1	GGCTCCTCATCTGGA	ACACCTCGGGTCACC	CCCGACACGGTGGT	GGGAGGGAGAGCGGC	CTCCTCCTCCCTGGT	GGGGCCTGTCTGGGT 90
4 LC2	GGCTCCTCATCTGGA	ACACCTCGGGTCACC	CCCGACACGGTGGT	GGGAGGGAGAGCGGC	CTCCTCCTCCCTGGT	GGGGCCTGTCTGGGT 90
5 LC3	GGCTCCTCATCTGGA	ACACCTCGGGTCACC	CCCGACACGGTGGT	GGGAGGGAGAGCGGC	CTCCTCCTCCCTGGT	GGGGCCTGTCTGGGT 90
6 LC4	GGCTCCTCATCTGGA	ACACCTCGGGTCACC	CCCGACACGGTGGT	GGGAGGGAGAGCGGC	CTCCTCCTCCCTGGT	GGGGCCTGTCTGGGT 90
91	105 106	120 121	135 136	150 151	165 166	180
1 NOC2	-----	-----TCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 65
2 NL1	GAAGCCCTCTGTTC	CCGAGGATCGTCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 180
3 LC1	GAAGCCCTCTGTTC	CCGAGGATCGTCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 180
4 LC2	GAAGCCCTCTGTTC	CCGAGGATCGTCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 180
5 LC3	GAAGCCCTCTGTTC	CCGAGGATCGTCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 180
6 LC4	GAAGCCCTCTGTTC	CCGAGGATCGTCCCA	ACCCCCAGCCGGGTG	CTCCGAGCCATGGCC	GACACCATCTTCGGC	AGCGGGAATGATCAG 180

CCGAGGATCGTCCCA

181 195 196 210 211 225 226 240 241 255 256 270
1 NOC2 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGC-- 108
2 NL1 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGC-- 223
3 LC1 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGC-- 223
4 LC2 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGCAGT GAACAGGACCAACAC AGTCCCTGGTCTTAA 270
5 LC3 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGC-- 223
6 LC4 TGGGTTTGCCCAAT GACCGGCAGCTTGCC CTTGAGCCAAGCAGT GAACAGGACCAACAC AGTCCCTGGTCTTAA 270
271 285 286 300 301 315 316 330 331 345 346 360
1 NOC2 -----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 179
2 NL1 -----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 294
3 LC1 -----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 294
4 LC2 AGCACAGGTGGGCAG AGGCTGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 360
5 LC3 -----TGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 294
6 LC4 AGCACAGGTGGGCAG AGGCTGCAGACGGGC TGGTCCGTGCACACC TACCAGACGGAGAAG CACCTCAGCCCGGCG 360
361 375 376 390 391 405 406 420 421 435 436 450
1 NOC2 GAGGTGAGGCCATC CTGCAGGTATCCAG AGGGCAGAGGGGCTC GACGTCTCTGGAGCAG CAGAGAAATCGGGCGG CTGGTGGAGCGGCTG 269
2 NL1 GAGGTGAGGCCATC CTGCAGGTATCCAG AGGGCAGAGGGGCTC GACGTCTCTGGAGCAG CAGAGAAATCGGGCGG CTGGTGGAGCGGCTG 384

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

3 LC1 GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGGGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGGG CTGGTGGAGCGGCTG 384
 4 LC2 GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGGGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGGG CTGGTGGAGCGGCTG 450
 5 LC3 GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGGGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGGG CTGGTGGAGCGGCTG 384
 6 LC4 GAGGTGGAGGCCATC CTGCAGGTCATCCAG AGGGCAGAGGGGCTC GACGTCCTGGAGCAG CAGAGAATCGGGGG CTGGTGGAGCGGCTG 450

 451 465 466 480 481 495 496 510 511 525 526 540
 1 NOC2 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 359
 2 NL1 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 474
 3 LC1 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 474
 4 LC2 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 540
 5 LC3 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 474
 6 LC4 GAGACCATGAGGCGG AATGTGATGGGGAAC GGCCTGTCCAGTGT CTGCTCTGCGGGGAG GTGCTGGGCTTCCTG GGCAGCTCGTCGGTG 540

 541 555 556 570 571 585 586 600 601 615 616 630
 1 NOC2 TTCTGCAAAAGACTGC AGGAAGAAAAGTCTGC ACCAAATGTGGGATC GAGGCGCTCCCTGGC CAGAAGCGGCCCCCTG TGGCTGTGTAAAGATC 449
 2 NL1 TTCTGCAAAAGACTGC AGGAAG----- ----- ----- ----- 495
 3 LC1 TTCTGCAAAAGACTGC AGGAAGAAAAGTCTGC ACCAAATGTGGGATC GAGGCGCTCCCTGGC CAGAAGCGGCCCCCTG TGGCTGTGTAAAGATC 564
 4 LC2 TTCTGCAAAAGACTGC AGGAAGAAAAGTCTGC ACCAAATGTGGGATC GAGGCGCTCCCTGGC CAGAAGCGGCCCCCTG TGGCTGTGTAAAGATC 630
 5 LC3 TTCTGCAAAAGACTGC AGGAAGAAAAGTCTGC ACCAAATGTGGGATC GAGGCGCTCCCTGGC CAGAAGCGGCCCCCTG TGGCTGTGTAAAGATC 564
 6 LC4 TTCTGCAAAAGACTGC AGGAAGAAAAGTCTGC ACCAAATGTGGGATC GAGGCGCTCCCTGGC CAGAAGCGGCCCCCTG TGGCTGTGTAAAGATC 630

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

	631	645	646	660	661	675	676	690	691	705	706	720
1	NOC2	TGCAGTGAGCAAGA	GAGGTC	TGGAAGAGG	TGGGGGCCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC				539
2	NLI	-----	---GTCTGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC					567
3	LC1	TGCAGTGAGCAAGA	GAGGTC	TGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC				654
4	LC2	TGCAGTGAGCAAGA	GAGGTC	TGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC				720
5	LC3	TGCAGTGAGCAAGA	GAGGTC	TGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC				654
6	LC4	TGCAGTGAGCAAGA	GAGGTC	TGGAAGAGG	TCGGGGGCCTGGTTC	TACAAAGGGCTCCCC	AAGTATATCTTGCCC	CTGAAGACCCCTGGC				720

	721	735 736	750 751	765 766	780 781	795 796	810
1 NOC2	CGAGCTGATGACCC	CACCTTCGACCTTTG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	629
2 NL1	CGAGCTGATGAGCC	CAGTTCGACCTTGG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	657
3 LC1	CGAGCTGATGACCC	CACCTTCGACCTTTG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	744
4 LC2	CGAGCTGATGACCC	CACCTTCGACCTTTG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	810
5 LC3	CGAGCTGATGACCC	CACCTTCGACCTTTG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	744
6 LC4	CGAGCTGATGACCC	CACCTTCGACCTTTG	CCACGGAAACCGCA	GAGCGAGAGCCGCA	AGCTCTGAGACCAGC	CGCATCTACACGTGG	810

	811	825 826	840 841	855 856	870 871	885 886	900
1 NOC2	GCCCGAGGAAGAGT-	-----	-----	-----	-----	-----	643
2 NL1	GCCCGAGGAAGAGT-	-----	-----	-----	-----	-----	671
3 LC1	GCCCGAGGAAGAGT-	-----	-----	-----	-----	-----	758

$$\frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx = \frac{1}{\sqrt{\pi}} \int_{-\infty}^{\infty} f(x) e^{-x^2} dx$$

5 LC3 CTAGAGGACAGACTC CCATCCACTGGGGTC AGGACCGGAAAGGC GACAAACCCCTGGAAG GAGTCAGGTGCAGC GTGGAGGCCCCAGG 1014
6 LC4 CTAGAGGACAGACTC CCATCCACTGGGGTC AGGACCGGAAAGGC GACAAACCCCTGGAAG GAGTCAGGTGCAGC GTGGAGGCCCCAGG 1080
1081 1095 1096 1110 1111 1125 1126 1140 1141 1155 1156 1170
1 NOC2 ATGGGGTTCACCCAC CCGCGGGGCCACCTC TCTGGGTGCCAGAGC AGCCTGGCCAGTGGT GAGACGGG----- 847
2 NL1 ATGGGGTTACCCAA CCGCGGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA 897
3 LC1 ATGGGGTTCACCCAA CCGCGGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA 984
4 LC2 ATGGGGTTCACCCAA CCGCGGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA 1050
5 LC3 ATGGGGTTCACCCAA CCGCGGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA 1104
6 LC4 ATGGGGTTCACCCAA CCGCGGGGCCACCTC TTTGGGTTGCAGAGC AGCCTGGCCAGTGGT GAGACGGGCACAGGC TCTGCTGACCCGCCA 1170

1171 1185 1186 1200 1201 1215 1216 1230 1231 1245 1246 1260
1 NOC2 -----GACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 929
2 NL1 GGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 987
3 LC1 GGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 1074
4 LC2 GGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 1140
5 LC3 GGGGAGGGACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 1194
6 LC4 GGGGGGGGACAGGC TCTGCTGACCCGCCA GGGGACCCCGCCCC GGGCTGACCCGAAGG GCCCCGGTAAAGAC ACACCTGGACGAGCC 1260

1171 1185 1186 1200 1201 1215 1216 1230 1231 1245 1246 1260

4 LC2 CGTCTGCCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCT GGGAGCTGTCTGCA TCCGCCACCCCTCC AACCACTGCCCTCAG 1410
5 LC3 CGTCTGCCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCT GGGAGCTGTCTGCA TCCGCCACCCCTCC AACCACTGCCCTCAG 1464
6 LC4 CGTCTGCCCTCCCCAG CTCAGTGCCTTTCTG CACCCCTTCTCTCT GGGAGCTGTCTGCA TCCGCCACCCCTCC AACCACTGCCCTCAG 1530
1531 1545 1546 1560 1561 1575 1576 1590 1591 1605 1606 1620
1 NOC2 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1289
2 NL1 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1347
3 LC1 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1434
4 LC2 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1500
5 LC3 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1554
6 LC4 CCCCCGACCTTATTT ATTACCTCCCTCC CACACCCCAATCTA CCTGTGATGATTTT AAGTTTGGCGTGTCTC TTGGGTTGGGCTGGG 1620
1621 1635 1636 1650 1651 1665 1666 1680 1681 1695 1696 1710
1 NOC2 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1379
2 NL1 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1437
3 LC1 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1524
4 LC2 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1590
5 LC3 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1644
6 LC4 GGGTTTCCACATGC AGTGTACAGAGGGGC GCCCGTGGGGCTAT CTCGGTTGCTATATT AATGGCAAGACTAAA TGAACCTAGGGCAC 1710

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

1711 1725 1726 1740 1741 1755 1756 1770 1771 1785 1786 1800
1 NOC2 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1469
2 NL1 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1527
3 LC1 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1614
4 LC2 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1680
5 LC3 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1734
6 LC4 GGCCTCCGAAGCTGC GTGTGGCCCTTTAGA GGTGAGCATCAGAGC CAGAGCAGTGAAGGG GAGACTACCCACCC TCTCCCTCTCCCTTC 1800

1801 1815 1816 1830 1831 1845 1846 1860 1861 1875 1876 1890
1 NOC2 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1559
2 NL1 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1617
3 LC1 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1704
4 LC2 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1770
5 LC3 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1824
6 LC4 AGCTCTGGGAGGCAG GCGCAGTGCCTCCCTT CCATGGGCTGGGCC AGGACCGGGGTGAA ACCTGGGTCTGTTA GTTCTTTGGTTTT 1890
1891 1905 1906 1920 1921 1935 1936 1950 1951 1965 1966 1980
1 NOC2 GTATGTTTGTGTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGGTGACGTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1649
2 NL1 GTATGTTTGTGTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGGTGACGTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1707

1500 1501 1502 1503 1504 1505 1506 1507 1508 1509 1510 1511 1512 1513 1514 1515 1516 1517 1518 1519 1520 1521 1522 1523 1524 1525 1526 1527 1528 1529 1530 1531 1532 1533 1534 1535 1536 1537 1538 1539 1540 1541 1542 1543 1544 1545 1546 1547 1548 1549 1550 1551 1552 1553 1554 1555 1556 1557 1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577 1578 1579 1580 1581 1582 1583 1584 1585 1586 1587 1588 1589 1590 1591 1592 1593 1594 1595 1596 1597 1598 1599 1600 1601 1602 1603 1604 1605 1606 1607 1608 1609 1610 1611 1612 1613 1614 1615 1616 1617 1618 1619 1620 1621 1622 1623 1624 1625 1626 1627 1628 1629 1630 1631 1632 1633 1634 1635 1636 1637 1638 1639 1640 1641 1642 1643 1644 1645 1646 1647 1648 1649 1650 1651 1652 1653 1654 1655 1656 1657 1658 1659 1660 1661 1662 1663 1664 1665 1666 1667 1668 1669 1670 1671 1672 1673 1674 1675 1676 1677 1678 1679 1680 1681 1682 1683 1684 1685 1686 1687 1688 1689 1690 1691 1692 1693 1694 1695 1696 1697 1698 1699 1700 1701 1702 1703 1704 1705 1706 1707 1708 1709 1710 1711 1712 1713 1714 1715 1716 1717 1718 1719 1720 1721 1722 1723 1724 1725 1726 1727 1728 1729 1730 1731 1732 1733 1734 1735 1736 1737 1738 1739 1740 1741 1742 1743 1744 1745 1746 1747 1748 1749 1750 1751 1752 1753 1754 1755 1756 1757 1758 1759 1760 1761 1762 1763 1764 1765 1766 1767 1768 1769 1770 1771 1772 1773 1774 1775 1776 1777 1778 1779 1780 1781 1782 1783 1784 1785 1786 1787 1788 1789 1790 1791 1792 1793 1794 1795 1796 1797 1798 1799 1800 1801 1802 1803 1804 1805 1806 1807 1808 1809 1810 1811 1812 1813 1814 1815 1816 1817 1818 1819 1820 1821 1822 1823 1824 1825 1826 1827 1828 1829 1830 1831 1832 1833 1834 1835 1836 1837 1838 1839 1840 1841 1842 1843 1844 1845 1846 1847 1848 1849 1850 1851 1852 1853 1854 1855 1856 1857 1858 1859 1860 1861 1862 1863 1864 1865 1866 1867 1868 1869 1870 1871 1872 1873 1874 1875 1876 1877 1878 1879 1880 1881 1882 1883 1884 1885 1886 1887 1888 1889 1890 1891 1892 1893 1894 1895 1896 1897 1898 1899 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944 1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000

3 LC1 GTATGTTTGTGTTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGTGCACTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1794
4 LC2 GTATGTTTGTGTTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGTGCACTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1860
5 LC3 GTATGTTTGTGTTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGTGCACTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1914
6 LC4 GTATGTTTGTGTTT TTTGACACAGTCTCG CTTTGTGCCAGGC TGGGTGCACTGGCA CGATCGGGCTCACT GCAACCTCCACCTCC 1980

1981 1995 1996 2010 2011 2025 2026 2040 2041 2055 2056 2070
1 NOC2 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 1739
2 NL1 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 1797
3 LC1 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 1884
4 LC2 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 1950
5 LC3 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 2004
6 LC4 CGGGCTCAAGCGATT CTCTCACTCAGCCT CCTGAGTAGTGGGA TTACAGATGCCCGCC ACCACACCCAGTTAA TTTTGTATTTTAG 2070

2071 2085 2086 2100 2101 2115 2116 2130 2131 2145 2146 2160
1 NOC2 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGCTCTCAAGTGATC CGCCCGGCTCGGCCT CCCAAAGTGCTGGGA 1829
2 NL1 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGCTCTCAAGTGATC CGCCCGGCTCGGCCT CCCAAAGTGCTGGGA 1887
3 LC1 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGCTCTCAAGTGATC CGCCCGGCTCGGCCT CCCAAAGTGCTGGGA 1974
4 LC2 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGGTCTTGAACTCC TGCTCTCAAGTGATC CGCCCGGCTCGGCCT CCCAAAGTGCTGGGA 2040

1794 1860 1914 1980 1739 1797 1884 1950 2004 2070 2160 1829 1887 1974 2040

5 LC3 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGCTCTTGAACCTCC TGCTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA 2094
6 LC4 AAGAGATGGGGTTTC TCCATGTTGGCCAGG CTGCTCTTGAACCTCC TGCTCTCAAGTGATC CGCCCGCCTCGGCCT CCCAAAGTGCTGGGA 2160
2161 2175 2176 2190 2191 2205 2206 2220 2221 2235 2236 2250
1 NOC2 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 1919
2 NL1 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 1977
3 LC1 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 2064
4 LC2 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 2130
5 LC3 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 2184
6 LC4 TTACAGGTGTGAGCC ACCGCAACCAATCCT ATTAGGTTCTTTGA ATCCCTCATGGCCT GCCTGGTTTTTGCTC AGCCTGTCTTCAGCT 2250
2251 2265 2266 2280 2281 2295 2296 2310 2311 2325 2326 2340
1 NOC2 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2009
2 NL1 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2067
3 LC1 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2154
4 LC2 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2220
5 LC3 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2274
6 LC4 TGAGGAGCTGGGAAG CTCTGGTGGATGCTA TGAACCTCACTTGCTG AAGAGCAGCGTTTCAG GTGCATCCCCAGCCA GGGCAGCTGGCTCCC 2340

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

3 LC1 TGAAGGGCCTTCTC TCCAGCTGGAGCT CCTGGGCCCCCACCCTTCACTTTTGTGCTTGCTGCTGGCAAACA GTAAAGAACTCACT 2424
4 LC2 TGAAGGGCCTTCTC TCCAGCTGGAGCT CCTGGGCCCCCACCCTTCACTTTTGTGCTTGCTGCTGGCAAACA GTAAAGAACTCACT 2490
5 LC3 TGAAGGGCCTTCTC TCCAGCTGGAGCT CCTGGGCCCCCACCCTTCACTTTTGTGCTTGCTGCTGGCAAACA GTAAAGAACTCACT 2544
6 LC4 TGAAGGGCCTTCTC TCCAGCTGGAGCT CCTGGGCCCCCACCCTTCACTTTTGTGCTTGCTGCTGGCAAACA GTAAAGAACTCACT 2610

2611 2625 2626 2640 2641 2655 2656
1 NOC2 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2327
2 NL1 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2385
3 LC1 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2472
4 LC2 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2538
5 LC3 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2592
6 LC4 TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2658

TTCCCTGTGGCAGGT TATGCTTCAGAATTA AAACAATGAAGATTA AAA 2658

Fig. 7

Fig. /	1	15 16	30 31	45 46	60 61	75 76	90
1	NOC2	MADTIEGSGNDQWVC	PNDQLALRAKLQTG	WSVHTYQTEKQRRKQ	HLSPA EVEAILQVIQ	RAERLDVLEQQORIGR	LVERLETMRNVNMG
2	NLI	MADTIEGSGNDQWVC	PNDQLALRAKLQTG	WSVHTYQTEKQRRKQ	HLSPA EVEAILQVIQ	RAERLDVLEQQORIGR	LVERLETMRNVNMG
3	LC1	MADTIEGSGNDQWVC	PNDQLALRAKLQTG	WSVHTYQTEKQRRKQ	HLSPA EVEAILQVIQ	RAERLDVLEQQORIGR	LVERLETMRNVNMG
4	LC2	-----	-----	-----	-----	-----	-----MRNVNMG
5	LC3	MADTIEGSGNDQWVC	PNDQLALRAKLQTG	WSVHTYQTEKQRRKQ	HLSPA EVEAILQVIQ	RAERLDVLEQQORIGR	LVERLETMRNVNMG
6	LC4	-----	-----	-----	-----	-----	-----MRNVNMG

	91	105	106	120	121	135	136	150	151	165	166	180
1	NOC2	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	TKCGIEASPGQKRPL	WLCKICSEQREVWKR	SGAWFYKGLPKYILP	LKTPGRADDPHERPL	180				
2	NL1	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	---	---	---	---	---	---	---	---	---
3	LC1	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	TKCGIEASPGQKRPL	WLCKICSEQREVWKR	SGAWFYKGLPKYILP	LKTPGRADDPHERPL	180				
4	LC2	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	TKCGIEASPGQKRPL	WLCKICSEQREVWKR	SGAWFYKGLPKYILP	LKTPGRADDPHERPL	98				
5	LC3	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	TKCGIEASPGQKRPL	WLCKICSEQREVWKR	SGAWFYKGLPKYILP	LKTPGRADDPHERPL	180				
6	LC4	GLSQCLLCGEVLGFL	GSSSVFCKDCRKKVC	TKCGIEASPGQKRPL	WLCKICSEQREVWKR	SGAWFYKGLPKYILP	LKTPGRADDPHERPL	98				

[Faint, illegible markings]

181 195 196 210 211 225 226 240 241 255 256 270
1 NOC2 PTEPAEREPRSSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKEPKW ESOGSVEAPRMGFTQ PPGHLSGCQSSLASG 270
2 NL1 PTEPAEREPRSSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKEPKW ESOGSVEAPRMGFTQ PPGHLSGCQSSLASG 241
3 LC1 PTEPAEREPRSSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKEPKW ESOGSVEAPRMGFTQ PPGHLSGCQSSLASG 270
4 LC3 PTEPAEREPRSSSETS RIYTWARGRVVGRKC ----- 210
5 LC4 PTEPAEREPRSSSETS RIYTWARGRVVGRKC ----- 128
6 LC2 PTEPAEREPRSSSETS RIYTWARGRVVSSDS DSDSDLSSSSLEDRL PSTGVRDRKGDKEPKW ESOGSVEAPRMGFTQ PPGHLSGCQSSLASG 188

271 285 286 300 301 315 316 330
1 NOC2 ETGTGSADPPGG-----PRPGLTRR APVKDTPGRAPAADA APAGPSSCLG 315
2 NL1 ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG 296
3 LC1 ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG 325
4 LC2 ETGTGSADPPGGGTG SADPPGGPRPGLTRR APVKDTPGRAPAADA APAGPSSCLG 243
5 LC3 ----- 210
6 LC4 ----- 128

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100